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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/822,838	04/02/2001	Hyun-doo Shin	Q59546	8476
7590	04/21/2004		EXAMINER	
SUGHRUE, MION, ZINN, MACPEAK & SEAS, PLLC 2100 PENNSYLVANIA AVENUE, N.W. WASHINGTON, DC 20037-3213			LE, BRIAN Q	
			ART UNIT	PAPER NUMBER
			2623	
			DATE MAILED: 04/21/2004	

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	09/822,838	SHIN ET AL.
	Examiner Brian Q Le	Art Unit 2623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-10 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 02 April 2004 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 5 and 6.
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_\_.

***Drawings***

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the full details of the calculation of pattern quantizing value must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

***Claim Objections***

2. Claims 1, 3, 5, 8-10 are objected to because of the following informalities: The terminology “denoised” or “denoising” is not a proper English word. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-10 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The key concept/term “pattern quantizing value” is not clearly disclose in the specification. The Applicant is required to clearly explain the terminology and the calculation of pattern quantizing value. Also, the

Examiner still not clear of how the threshold value working in conjunction with pattern quantizing value. Further elaboration is required. The Prior Art rejection based on the Examiner's best understanding.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Applicant is required to clearly explain the terminology and the calculation of pattern quantizing value. Also, the Examiner still not clear of how the threshold value working in conjunction with pattern quantizing value. Further elaboration is required. The Prior Art rejection based on the Examiner's best understanding.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1, 5 and 9-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakagawa U.S. Patent No. 5,291,282.

Regarding to claim 1, Nakagawa teaches a method of describing pattern repetitiveness of an image (FIG. 6) comprising the steps of:

- (a) projecting an image on a predetermined axis having a predetermined direction (DCT Transformation Concept) (FIG. 5);

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- (b) decomposing the projected image down own level (divide the image into blocks) (column 7, lines 1-5);
- (c) increasing a threshold value until a pattern quantizing value is retained (column 11, lines 59-68 and column 30, lines 59-68), and denoising the decomposed data (amplification and noise removal) (column 33, lines 1-10); and
- (d) describing pattern repetitiveness of the image using the pattern quantizing value of the denoised data and the threshold value used for denoising (column 33, lines 1-15).

For claims 5 and 9-10, please refer back to claim 1 for further explanation.

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 2 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakagawa U.S. Patent No. 5,291,282 as applied to claim 1 above, and further in view of Acharya U.S. Patent No. 6,574,374.

Regarding claim 2, as discussed in claim 1, Nakagawa teaches the concept of decomposition. However, Nakagawa does not disclose the concept of decomposition is based on a discrete wavelet transform. Acharya teaches the system removing noises/artifacts (abstract) wherein the decomposition is based on a discrete wavelet transform (column 4, lines 1-10) to further remove the artifacts from the image. Modifying Nakagawa's method of describing

pattern repetitiveness according to Nakagawa would able to further remove the noise and artifacts from the images. This would improve processing and therefore, it would have been obvious to one of the ordinary skill in the art to modify Nakagawa according to Acharya.

For claim 6, please refer back to claim 2 for the explanation.

### ***CONCLUSION***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following patents are cited to further show the state of the art with respect to image pattern, image's noise removal/artifacts, DCT and Discrete Wavelet Transform:

U.S. Pat. No. 6,181,823 to Takahashi, teaches image processing method and network system.

U.S. Pat. No. 5,028,991 to Sekizawa, teaches image signal processing for use in color image reproduction.

U.S. Pat. No. 5,825,419 to Mishima, teaches coding device and decoding device of digital image signal.

U.S. Pat. No. 5,832,118 to Kim, teaches texture classification employing coarseness and directivity of patterns.

U.S. Pat. No. 5,805,933 to Takahashi, teaches image processing method and network system.

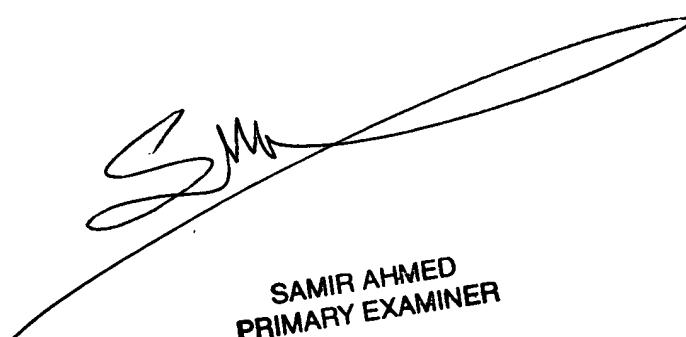
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12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Q Le whose telephone number is 703-305-5083. The examiner can normally be reached on 8:30 A.M - 5:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on 703-308-6604. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and 703-872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to TC Customer Service whose telephone number is 703-306-0377.

BL  
April 16, 2004



SAMIR AHMED  
PRIMARY EXAMINER